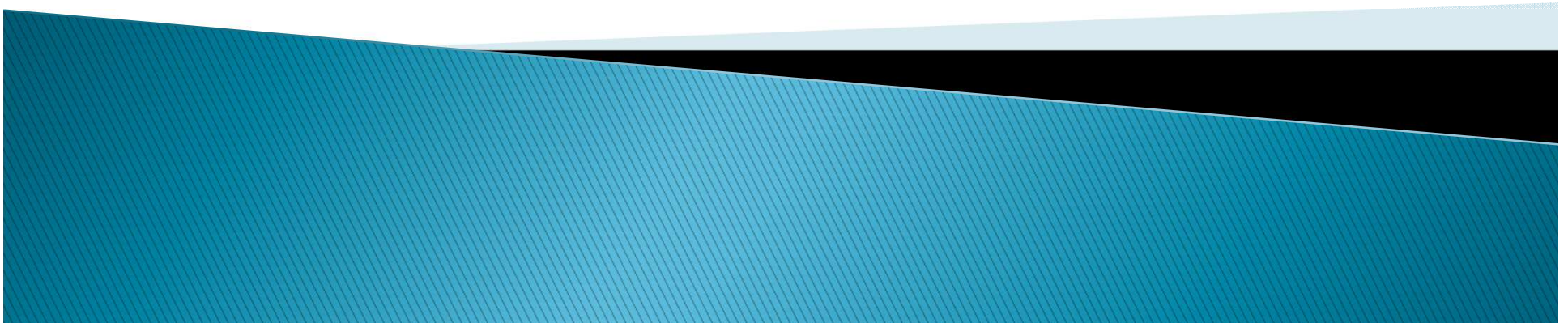


# PEV Infrastructure Information Gathering Meeting

Air Resources Board  
July 15, 2014  
Sacramento, CA



# Logistics

- ▶ Emergency/Restrooms/Access
- ▶ Introductions
- ▶ Overview of today's meeting
  - Highlight findings from May 27 meeting
  - Information updates
  - AM Topic – public and multi-use parking structures
  - PM Topic – DCFCs on corridors and popular venues
- ▶ Participation is encouraged
- ▶ Lunch – on you own



# PEV Infrastructure Evaluation

## Driving Forces

- ▶ California Zero Emission Vehicle regulation
- ▶ ARB Resolution 12-21
  - Requires a regulatory review of public PEV infrastructure
- ▶ Governor's Executive Order B-16-2012
- ▶ Mid-Term Review of ZEV regulation
  - Report actual and projected availability of charging infrastructure
  - Costs for alternative fuels



# Qualitative Evaluation of PEV Infrastructure will include:

- ▶ “Current” status of PEVs and public PEV infrastructure in California
  - Public charger and PEV inventory
  - Investments made and future financial commitments
  - Trends in EVSE equipment and installation costs and pricing for charger usage
  - Codes, standards and PEV readiness efforts
  - Examples of public infrastructure that meet demand and achieve ARB’s objectives



▶ Recommendations moving forward

# Evaluating PEV Infrastructure with an eye on the future

- ▶ Hallmark objectives
  - Increase PEV adoption
  - Increase eVMT
  - Increased use of low/zero emission energy sources for transportation
- ▶ Factors affecting drivers' preference and usage of workplace and public chargers
- ▶ Reveal findings on growth of public and workplace infrastructure so that it promotes above objectives





# First PEV Info Gathering meeting

## Posed questions

- What matters most in terms of location, setting, density, type and charge level?
- What models work well for everyone – drivers, hosts, EVSE/Network providers, utilities & municipalities?



# What we learned – Workplace

- ▶ Knowledge of more infra increases likelihood of purchase or repurchase (Nissan)
- ▶ Workplace congestion may discourage PEV adoption (UCD)
- ▶ Workplace charger congestion can be mitigated by requirement to pay (Chargepoint)
- ▶ 2 chargers/10 PEVs needed if priced (UCD)



Courtesy of Chargepoint, 2014

# What we learned – Public

- ▶ More stations needed in “hot spots,” where existing stations are always busy (Chargepoint)
- ▶ Having certainty that a charger will be available is more important than price (Chargepoint)
- ▶ If chargers at a destination are congested, BEV drivers are less likely to attempt a trip (UCD)
- ▶ Billing by use or time increases availability (Chargepoint)





# Public (cont'd)

- ▶ Except at workplace, fast charging is always preferred (Nissan)
- ▶ Time to charge is #1 concern, but cost and convenience are also important (Nissan)
- ▶ DCFC can be a bridge to ubiquitous Level 2 (UCD)
- ▶ More BEV drivers would attempt longer trips if DCFCs and back-up DCFCs were on the route (PlugInsights)



# Areas for further inquiry

- ▶ L1 vs. L2 in workplace and longer term settings
- ▶ L2 vs. DCFC in shorter term settings
- ▶ Utility and CPUC engagement to facilitate development of workplace and long-term parking sites that accommodate vehicle-grid integration
- ▶ Costs and technology trends in equipment and installation
- ▶ Gain understanding of self-sustaining charging infrastructure business models



# Report Schedule

- ▶ More information gathering meetings?
- ▶ Additional stakeholder outreach
- ▶ October 2014 Board Hearing
  - First release of findings (memo to Board)
  - Informational presentation (no Board action)
- ▶ Early 2015, release report (working title):  
*“A Qualitative Evaluation of Public PEV Infrastructure in California”*

